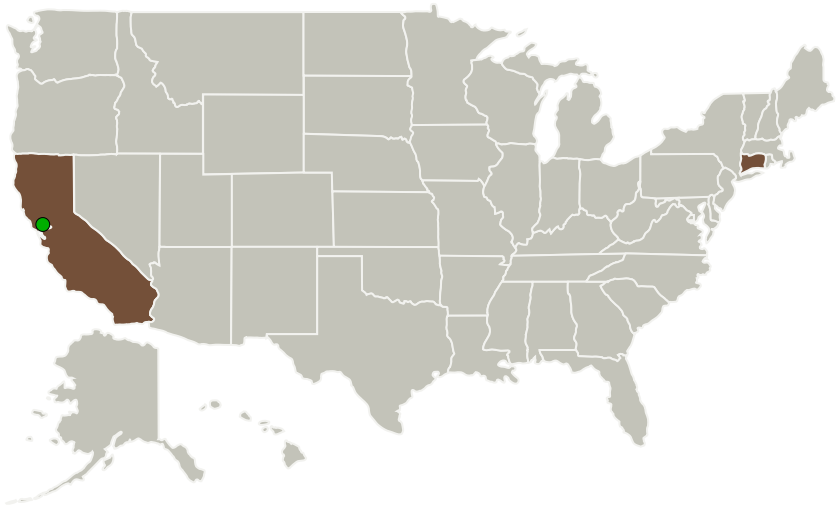
Efficient Integration, Validation and Troubleshooting in Multimodal Distributed Diagnostic Schemes, Phase II

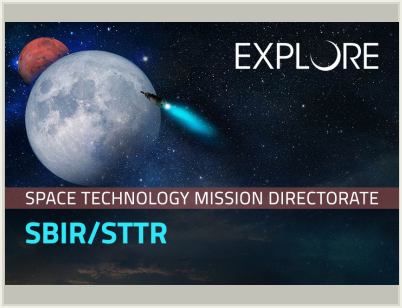
Completed Technology Project (2010 - 2012)

Project Introduction

In general, development and validation of diagnostic models for complex safety critical systems are time and cost intensive jobs. The proposed Phase-II effort will automate some vital processes essential in developing integrated diagnostic schemes and cost-effective revalidation of the integrated models. The automated processes, resulting from this effort will be incorporated as tools in TEAMS Design and Analytic Platform. For reducing the burden of testing diagnostic models, capability for automatically generating test cases, regression test suites along with the options for their playback will be developed under this effort. Additionally, an option for efficient diagnostics and troubleshooting in multi-mode systems will be introduced in TEAMS via this SBIR effort. To ensure the readiness of the TEAMS tools and options developed through this effort, those will be verified and validated with one or more NASA's ground support systems that are associated with the ARES or Constellation Program Ground Support. Collectively, these achievements will significantly reduce the time and cost in developing and better utilizing large scale fault diagnostic systems using TEAMS.

Primary U.S. Work Locations and Key Partners





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Organizations Performing Work	Role	Type	Location
Qualtech Systems, Inc.	Lead Organization	Industry Minority-Owned Business, Small Disadvantaged Business (SDB)	Rocky Hill, Connecticut
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

Primary U.S. Work Locations	
California	Connecticut

Project Transitions

January 2010: Project Start

January 2012: Closed out

Closeout Summary: Efficient Integration, Validation and Troubleshooting in Multimodal Distributed Diagnostic Schemes, Phase II Project Image

Closeout Documentation:

- Final Summary Chart Image*(https://techport.nasa.gov/file/138961)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Qualtech Systems, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

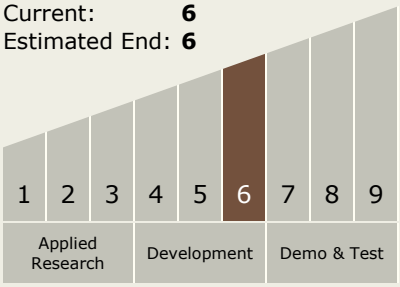
Carlos Torrez

Principal Investigator:

Sudipto Ghoshal

Technology Maturity (TRL)

Start: **6**
Current: **6**
Estimated End: **6**



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Technology Areas

Primary:

- TX17 Guidance, Navigation, and Control (GN&C)
  - TX17.2 Navigation Technologies
    - TX17.2.1 Onboard Navigation Algorithms

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System